

Rehabilitation After Laryngectomy

NORMAN JESBERG, M.D., Los Angeles

THE DIAGNOSIS of carcinoma of the larynx and treatment by laryngectomy when necessary are so well standardized at present that the remaining major problems in dealing with patients with carcinoma of the larynx requiring radical operation are how to make the diagnosis earlier and deal with recurrence, and how to rehabilitate patients adequately after operation.

By earlier diagnosis the 60 to 65 per cent five-year survival rate which now obtains with laryngectomy may be increased, and also the need for total laryngectomy may be lessened if treatment can be started when the lesion is still in a stage at which partial laryngectomy or x-ray may be used with a reasonable chance for success. In spite of the emphasis placed on early diagnosis and cancer detection, all too frequently a patient does not consult a physician until long after that stage.

MENTAL PREPARATION OF PATIENT

Even if total laryngectomy is necessary, however, very satisfactory rehabilitation may be brought about. A person confronted with the advice of laryngectomy is naturally disturbed, not only by the knowledge that he has cancer but also by the fact that the only means of successful treatment entails loss of his voice forever. How will he be able to work and communicate with his family and friends? This is so upsetting that not infrequently the patient is anxious to seek another form of treatment even though the chance of cure be less. Fear of loss of the voice has too frequently caused a patient to accept less than he needed in treatment and has influenced a physician toward conservatism later to be regretted. Laryngectomy is not to be feared to that degree, inasmuch as useful and adequate vocal rehabilitation may be attained in a few weeks with a little work. Esophageal speech can be learned readily by anyone who can swallow and belch under control.

There is nothing new about the phenomenon of esophageal speech. Czermak (as cited by Morrison¹) in 1859 reported a case of a young girl with complete laryngeal obstruction who spoke with an esophageal voice. Examples of it following laryngec-

• Vocal rehabilitation after laryngectomy, using esophageal speech, may be achieved by any patient who can swallow and who has good hearing, provided he is psychologically prepared before operation and begins trying to learn soon after operation.

A patient passes through the early postoperative period much more easily if he knows that within a few short weeks a useful method of communication can be learned.

Instruction by a person who has had laryngectomy has psychic as well as didactic advantages.

tomy have probably been known dating back to the early history of laryngectomy, which was first performed for carcinoma by Billroth in 1873. In 1895 J. Solis-Cohen demonstrated a patient who developed a successful esophageal voice after laryngectomy, and many others have since reported instances of patients who "discovered" useful voices spontaneously. With the advent of more frequent use of the operation and the realization of the need for rehabilitation, there has been considerable emphasis placed on systematized instruction for persons who have had laryngectomy.

Vibration of the soft tissues at the pharyngo-esophageal sphincter may be achieved by mobilizing air in the upper portion of the esophagus. Sounds thus appropriated from a false larynx may with practice be refined into speech which is adequate to carry on ordinary communication. A person who is to have laryngectomy should be informed that unaided speech may be developed afterward. He can then meet patients who have made a satisfactory adjustment, and this is often sufficient to give him confidence when he needs it most. Experience has proved that a patient properly prepared mentally for laryngectomy goes through the operation easily and the postoperative period is not marked by depression.

METHOD OF INSTRUCTION

Rehabilitation of a patient after laryngectomy and the teaching of esophageal speech is best carried out by another person who has had his larynx removed and has learned to speak. At the Los Angeles Eye & Ear Hospital the speech class is taught by such

¹From the Los Angeles Eye & Ear Hospital.
Presented before the American College of Surgeons Sectional Meeting, Los Angeles, March 30-31, 1953.

a person—Dr. Frank O. Brigham. The method developed by Mrs. Mary A. Doehler of the Massachusetts Eye and Ear Infirmary has been found to be very satisfactory. There is great psychological advantage in having an instructor who speaks as his pupils must learn to speak. Not only does the patient learn more quickly, but he is encouraged by example to adjust to his changed condition. Group instruction is also very helpful in achieving adjustment to life without a larynx. It has been found advisable for patients to begin early and to have a few hours of private instruction to develop the rudiments of esophageal speech. They can then continue with private instruction or join the class along with pupils in different stages of progress. Periodic visits to the class after the development of an adequate voice are desirable in order that minor defects in speaking may be corrected and the graduates may have an opportunity to encourage beginners. It is well to include these visits with regular postoperative medical observation.

As soon as the feeding tube is removed and the patient is able to swallow he is ready for instruction. This is usually on the fifth or sixth postoperative day. Progress in actual production of voice may take from several days to weeks but the psychological advantage of an early start is great. By the time the patient is ready to be discharged from the hospital, usually on the tenth postoperative day, he has already had several speech lessons and not infrequently he is able at this early date to say monosyllabic words. Once the knack of swallowing and belching is learned, the sound can be refined into speech, using the tongue, teeth and lips.

A carbonated beverage is often useful in the early stages to give the patient the idea. At first a person must swallow for each syllable but with practice in counting and saying simple combinations of consonants and vowels, polysyllabic words and then sentences are learned. There is a tendency for the beginner to attempt to speak with the reservoir of tracheal air and to breathe in and out as if he had a larynx. Swallowing is sometimes noisy and blots out the voice. However, as facility in swallowing and belching improves, extraneous tracheal noises and audible deglutition is reduced to a minimum and there is rapid progression to satisfactory speech.

A certain degree of relaxation is necessary to develop a satisfactory voice. The beginner is often tense and attempts to swallow without relaxing. He may also try too hard, attempt to speak too loudly and spend all his reservoir of air on one or two syllables. Exaggerated lip, tongue and pharyngeal movements may appear. These tendencies are most difficult to deal with and overcoming them takes constant work and practice.

It is preferable for patients to discard the tracheal cannula in order to develop the best esophageal voice. A special effort is made to shape the tracheal stoma at operation so that it will be widely patent and that after a few weeks the patient will only need to wear a gauze bib over the opening.

Preoperative training has not been considered useful or practical inasmuch as esophageal speech seems somewhat easier after the larynx is removed. Moreover, even if the patient could not learn preoperatively, operation still would have to be carried out.

RESULTS OF INSTRUCTION

Since the beginning of speech rehabilitation instruction at the Eye & Ear Hospital in January 1949, 111 pupils have attended classes, 102 men and 9 women. Two pupils did not have laryngectomy but had severe laryngeal injury. One of them, who had complete laryngeal obstruction following radiation treatment, developed a very satisfactory voice. The other, a 19-year-old boy who had severe laryngeal injury, did not learn well. The age range of the men was from 19 to 78, and of the women from 39 to 73. As might be expected, in general the women learned to speak better than the men. Only one of the women did not develop a satisfactory voice. One woman, 61 years of age, who developed an excellent voice but with pronounced lowering of pitch said that her major problem was that her young grandchildren now called her grandpa instead of grandma. Many pupils reported that their best listeners after laryngectomy were children. Perhaps this can be ascribed to acute hearing and unfettered minds.

Failure to master esophageal speech after an adequate trial occurred in several situations. As might be expected, impairment in hearing presents a serious handicap. There were 8 patients in this classification, and all of them failed to learn. Patients who begin to take instruction too long after operation, either after other methods of communication have been depended upon or after a state of complacency has been reached, have difficulty in learning esophageal speech. Seven patients who tried to learn after periods of 1 to 23 years had elapsed since laryngectomy were unable to do so. In general, elderly patients appeared to learn slowly, and several in the 70- to 80-year bracket did not do well although they had good hearing. Persons speaking a foreign language are naturally more difficult to teach. Two in this category in the present series have not made satisfactory progress.

There can be no doubt that one of the most valuable assets in the learning of esophageal speech is the will to do. Without the desire and the expenditure of effort, all teaching is futile. Some of the patients gave up too easily or just did not try. Perhaps they

were not properly prepared psychologically before operation. Fortunately they can fall back upon artificial speaking devices such as the electric larynx, which are better than nothing.

Excluding the patients who did not learn for one or another of the reasons mentioned, approximately 70 pupils were serious students of esophageal speech. Almost all of them developed a satisfactory and useful voice and made a good adjustment to the changed state after laryngectomy. Some of them probably would have developed a usable voice without instruction, but in all likelihood the teaching and

classwork greatly increased the number successfully rehabilitated. Many of the pupils are working at their former jobs in all walks of life and are in general as happy as if they had a larynx. One well adjusted pupil said, "You know, in the past three years I have found out that most people talk far too much anyway."

500 South Lucas Avenue.

REFERENCE

1. Morrison, W. W.: The production of voice and speech following total laryngectomy, *Arch. Otolaryng.*, 14:413, 1931.

Tax Deductions

THE HOUSE WAYS AND MEANS COMMITTEE voted to increase tax allowances for medical expenses by providing that medical costs can be deducted from taxable income if they exceed 3 instead of 5 per cent of adjusted gross income.

Maximum limitations for deductions would be doubled from \$1,250 to \$2,500, multiplied by the number of exemptions, with a limitation of \$5,000 on single taxpayers and \$10,000 for heads of families or married couples filing a joint return. These limits also double those in present law. The tax loss is estimated at about \$119,000,000.

Under the new proposal costs of medicines and drugs could be included in medical expenses only to the extent these items exceed \$50 or 1 per cent of adjusted gross income, whichever is greater. At present it is generally accepted that all medicines and drugs can be included. The government expects by this change to add \$40,000,000 in tax money.

Transportation expenses, where travel is prescribed by a physician, could be deducted but not the cost of meals or lodging. A decedent's medical expenses also could be deducted if paid by his estate.

—A.M.A. Washington Letter